

US Appl. Serial No. Unassigned
**HISTOPLASMA CAPSULATUM CHITIN
 SYNTHASE SEQUENCES AND THEIR USE FOR
 DETECTION OF HISTOPLASMA
 CAPSULATUM AND HISTOPLASMOSIS**
 Inventors: JOHNSON, et al.
 Express Mail No. EV 316331604 US

SEQ. ID NO: 9

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1  CGCAAATCAG CAACTGATCC GACCGCACGA TGATGGCCCA TCGACGCTTC
51  CCCCTGTGCA GATGATGTTC TGCTTGAAAC AAAAGAACAG TAAGAAAATC
101 AACTCTCACA CATCCCTGTT CAATGCCTTT GGCCGAATCC TCAACCCGGA
151 AATCTGCATC TTGCTCGACG CGGGTACGAA GCCGGGTCAT AAATCCCTCC
201 TGGCACTGTG GGAAGCCTTC TATAACGACA AAGATCTGGG CGGCTCGTGC
251 GGCGAAATCC ACGCTATGTT GGGCAAAGGC TGGAAAAACC TCATCAACCC
301 TCTTGTTGCA GCGCAAACT TCGAATACAA AATCAGTAAC ATCCTGGATA
351 AACCTCTGGA ATCCTCCTTC GGCTACGTCA GCGTGTTGCC CGGTGCCTTC
401 TCTGCCTACC GCTTCCGTGC AATCATGGGC AGACCTCTCG AACAGTACTT
451 CCACGGTGAC CATACTCTCT CCAAACAACT CGGTCCCAAG GGTATCGAGG
501 GCATGAACAT TTTCAAGAAG AACATGTTCT TGGCCGAGGA TCGGATTCTG
551 TGTTTTCGAAC TCGTGGCCAA GGCCGGGTCC AAATGGCATC TGTCTACGT
601 CAAGTCGTCC AAGGGCGAGA CTGACGTGCC CGAGGGAGCC CCCGAATTCA
651 TCGGCCAGCG TCGTCGGTGG CTCAACGGCT CGTTCGCAGC TAGTATCTAC
701 TCATTGATGC ATTTTGGCCG AATGTATAAG AGCGGCCATA ACCTTCTGCG
751 CATGTTCTTT TTCCATATTC AGATGATCTA CAATACGTGC ACCGTTATCA
801 TGACTTGGTT TGCCTTGCT TCATACTGGC TCACAACTTC CGTCATCATG
851 GACCTCGTCG GAAACCCCTCC CGCTCCAGAA TCTGGCAGCA CGCAGAGGGC
901 ATTCCCATTC GGCAATACCG CCACTCCGAT TGTCAACACT GTTCTGAAGT
951 ACTTGATCTT GGCCTTCCTG CTCTTGCAGT TTATTTTGGC TTTGGGTAAC
1001 CGGCCTAAAG GATCTAAACA CTCGTACATC ACCTCCTTCG TCGTATTCGG
1051 CATTATCCAA TTGTACATCA TTGTCTTATC CATGTACCTC GTCGTCCGCG
1101 CCTTCAGCGG TGGCACACTC GCCTTCACAA CAGACAAAAG TATCGGCGAA
1151 TTCCTCAAGT CCTTCTTCAG TTCCGAAGGA CCGGGAATCA TCATCATCGC
1201 CCTCGCCGCT ACCTTCGGCC TATATTTCGT CGCTTCTTTC ATGTACCTTG
1251 ACCCTTGGCA CATGTTTACC TCCTTCCCGG CCTACCTCCT GATCATGTCC

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FIG. 1A

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TOPLASMA CAPSULATUM CHITIN
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1301 TCGTACATCA ACATCCTGAT GGTCTACGCC TTCAGCAACT GGCACGATGT
1351 GTCGTGGGGC ACAAAGGGTG CGGACAAAGC CGACGCTCTG CCCTCTGCCC
1401 AAACGCAAAA GGAAGACGAC GGCAAAGCTG CTGTGATCGA GGAGATCGAC
1451 AAGCCGCAGG CGGATATCGA CAGCCAGTTT GAAAGCACTG TGAACCGTGC
1501 GCTGACGCCG TACGTGGAGC CAAAGGTGAA GGAGGGGAAG TCGCTAGATG
1551 ATTCTGTATAA GAGTTTCCGC ACGCGGTTGG TGACGCTATG GCTGTTTTCG
1601 AATGGCATTG TTGCCGTGGC CATTACCAGC GAGGATGTGA ACAAGTTTGG
1651 ATTCACGTCC CGAGCAACCA GCCGAACCAC GCATTTCTTC CAGGCTCTCC
1701 TTTGGGCGAC CGCAGCGCTC TCCCTCATCC GCTTCACCGG CGCATGCTGG
1751 TTCCTTGCCC GGAAGTGAAT TATGTGCTGC TTCGCGAGAA GATAGTCAGT
1801 CCATTTGGCT CTGGATTTTC TATATATTTT GTTTGGTGAT GCAAAAATCT
1851 TTTGCTTCCC TTTTTCCTTT TCTCTTTCGG GTGACCTTTT TGTTCGGGGC
1901 GACGGCACGA AACC CGGAAT AATATAAGAC AAGGATGGGG GAGAAGAGAG
1951 CATGAAGATC GAAGATCGAA AGTCGAAAGT CGAAAATTGA AAGGAGAAGA
2001 AAGGAAATGA CAAGAACTG GCAGCTGCCG CTTGGCCAAC TGTGGAAGAG
2051 TTTTCTTTT GCATTTCTAT GAATATGTCC CGATTTTGTT TTTCTTTTCC
2101 CATGCTTGT TGTCTTTTTC GCTTTTTTCG ATTCCTTCC TATAATAATG
2151 GCAAGATGTG TCCTATTTCC TCCTGCCTGG CCTCTCTTTT GTGTGTTTCT
2201 ATATGCGTGA GAGCCTCTGA ATTCCGAATC TAATGTTCTG TTTGTTGTCT
2251 T

FIG. 1B

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SEQ ID NO: 10

TGCTTTTTTTGAAGGTTCTACCCTTAGCCCAAAGTCCGGCTTTCCNCTTNT
TTTCTTTTTTTTCTTTTTTGGACNAGGACCATGGATCCCCCCCCCATNCATCG
GGTCCNGAGAGAAGATGGTCCAAATATTCTTAAACTATCTTGATCCCTTGT
AACCCAATGTCCCCAATCGGCTTCCCAAATTTGGCCAACAATTCCAATTTTC
NACCCCCCACNAGCGGGAGTAATGGAGCAACNATGCAAACCCGAACCCCN
TGCAACGGTTCCCCAAAAGCCACCCCTCTGAACAGTGATTGACAAATCGG
TGCAAGGCATTGCTCACGGGGTACTCACCTGAACAATCGACACGGCATAAA
TGTTGGTGGATGGCAAGACAATTAATTCATCTTCATTGAGCTTTATTTGTT
TATTCCCAGCCATTACAAAAACCAAAGTCCAAAATTCAAAAATCAGGG
CTTGGTTTTGCCTCCCCATTTTGGCCCTGAATAACGGGAAGGTTAGTTACA
TAGTAAAAGTAAAACCGTGTTGAACAAAAGTTTCGAGGATCGCAACCAGAC
AAATTGGACCAGGATCTCTTGACTTCCCGTCTTTCGGCTAAGAATAGACTT
TTTTTGGGGCAACGAAATTCTGGTACAACCTTTTGATTTCTGGCGGGTTTCA
GATATGTGGGGACATTATCGGGAATGATAAATTTTTTTTTTTTTTTTTTG
GACTGCTCTCAAACCTCATGTGATAATATCACAGACAATAGGTATCGCAAGC
GAGCATCTTGACTTGACTGCTGAGAAGTGATCTTGTCGCTGCAATTGGTGG
AGGCGACTAACAGACGAACAGCCTCGCAGGATGCATGCATGAATACAGCAA
GTCGCTGCAGAGGTCATCACATTATGATGTCCTCCACGCCCGTTTTCTTCTC
CTTCAGATACACCCATCCATCCATATGCATATACATATACATATACATATG
TGTCGTGATGTGACGGTGCCGCGCGCAGTATGAATGATTCGCTGCCTCTAA
GTATGGGACAAGTAAGTATGTACTGTACATATACGTATGTCTGTCTGTCTG
TCTGTCTGTCTGTCTGTATGCAGTCCAACCTGTGGACAAAGCCCTCGCGGCA
ACGTTCAAAGCGGCGGAGACAAGAGAAGAAGGTGAAATTAAACTGAGTAGAT
GGCAGAATCGCCGCCATGTCTCCCTTTCCTTCCGGCTAGAGGAGGCAGAGG
AAAGGCTGATTGAGCGAGTGGGGGGGAGCATTATTTATCCACCCTGAGCTGG
GCTGGGCCTGGGCGGAGAGTACCATTGAGTAGAGTTGTGAACTGTGGTCT
ATGCTCGATGGAAGCAACGTACCTGGCTTACCTGGCTCACCTGGTTGAAA
TCCAAACGGCGAGTATATATCCATATCCAGATATGTGCGCATGTTGAATG
GTGGCGATTAATCGGATGTCCATGTCAATCTCCTTTCTCGGCAAAATATAT
ATCTACCTACTTGTATGGTAATGTGTATCCCACCCTTACCAAACGCGGCTG
AACAAAGAAAGTTACGGTAAATTTACGCTAGTACCCAGCCAGAAGCTGGG
TACGGCTCCTGTGCTCTGTACAGTCCGGCCATACCATAACCATACCG
TACCATAACCGTACCATATCACGTTTCATCCACCCGTTTGCCCCAAGAGAAA
TATCATCATCGCCTTTTCGGGCCTGTAGCTTACTTTCTTTTTTCTATTTT

FIG. 2A

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TTTCTTTTCTATTTCTATTTCTATTTCTATTTCTATTTCTGCTGCTTATTAT
TCTCGCCTGTTGGTCTTGTCCAGCAAGCCTGGGAATATCAAGCGCTCGTCT
GTGGTTTGTGTTTTATCCGTTGCCCTGCTTTGTGTCCCGCTGCCCCCTTAGC
TCCCTGTGGCTTCGCTGCCCCCTAAAAACAATCATCTTCTTCTTCCGCTG
CTCTGTTCTCGCTCGTCTCTCTTCTCTCTTCTCTTTTCTCTGCCTCTCTTC
CTCCTCTCGATCCATCCATCTATTCTCCCCCTCTATCCTTCTATCCGCTTCA
TCAACCCAGCCTCTCGTTTTTGACGGCGGCCACAGCTCCCTCATCATGGCCT
ATCCAGGCTCGAACTCTCCAGGGGGGTACGGCGATGGCCATCGACTCCATG
ACCTCCCATCTGGCAGCGTGAGAAAACACTCTTTCCTATGTATATGCATAT
GATATAGATATAGATATAGGTATACATTTATATACATATATAAGAGAGCGT
GTGTGTCTGTGTGTGTGTCTGTTTTGTGTGTGTGTATCTGTCTGTATATAT
ATACACATCGATATATATATATGCTTTTGGCTACGTATTCAAGCACTGGTTCC
CCCTGGTCCGCGGCCACGGTACCAGTGGTTTCAGGATGATATCCTCTCAAC
ACAGGAACCACCCCTTGCTAACTTGCCCCCTTAAATCGCTCCAGCAATATAA
TCTTCCCGCCGAACACGATGCCTCCCAATCGCTCCTCCACCAAACCAAGG
CCCATTCAGCGGCCCTTTGATGACCCCAACACCACCACCGCGGTGGCTC
TCCTGTCCGATCCCCCTCCAGATACAGCCTGACAGAATCCTACGTAACCGA
CCATCCCAAGCTCAAGACCACTACGGCGGCCAAATGGAAAATCCCGCCGC
TGGCTTTGGTGTTCGCGGTTCGGTTCGCTCCCCCTATACCCGCAGTGAGAC
CTCCTCCACGGAGGCTGGCGTCAGCGACAGGCGCCCGGCAATCTGCGCCG
TTATGCCACCAGGAAAGTCAAACCTTGTTCCAAGGCTCTGTTCTCAGTGTGCA
TTATCCCGTTCCAGTGCTATTCAGAATGCCGTGCAGGCTAAATACCGCAA
TGATCTCGAAGGTGGTAGTGAGGAATCACTCATATGCGATGTAGGTTTTT
GTCCTTGATTTCTTTTTCTTTTTACTCCCTCTGCTTTGGTTTATGGTTCGT
CTCCTTGCTGATTTGCTGCTGCCATCTTAGACACCGCCGCTACCTGTGATC
CCAACGAGTTCACTCTGCACAATGGGTACAATCTGCGCCCGGCGATGTATA
ACCGTCATACCGAACTGCTGATTGCTATTACCTATTACAATGAAGACAAAA
TGCTTACTTCGCGCACCCCTGCACGGCGTAATGCAAATATCCGTGACATTG
TGAACCTCAAGAAGTCCGAGTTCTGGAACAAAGGTGGACCTGCTTGGCAGA
AAATCGTTGTCTGTCTGGTCTTCGATGGAATCGACCCTTGCGACAAAGACA
CCCTCGACGTGCTGGCCACAATTGGAATCTACCAGGATGGCGTGATGAAAA
AAGATGTGATGGAAAGGAAACCATCGCCACATTGTGAGTACATATATGA
TACCCGTAGCCCAATTTTTTGCACCTTCTACTACTGCTACACTGTACTAAC
TTCCCGTCTAGTTTGAATACACCACCACTCTCAGTCACCGCAAATCAGC
AACTGATCCGACCGCACGATGATGGCCCATCGACGCTTCCCCCTGTGCAGA

FIG. 2B

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TGATGTTCTGCTTGAAACAAAAGAACAGTAAGAAAATCAACTCTCACAGAT
GGCTGTTCAATGCCTTTGGCCGAATCCTCAACCCGGAAATCTGCATCTTGC
TCGACGCGGGTACGAAGCCGGGTCTATAAATCCCTCCTGGCACTGTGGGAAG
CCTTCTATAACGACAAAGATCTGGGCGGCTCGTGCGGCGAAATCCACGCTA
TGTTGGGCAAAGGCTGGAAAAACCTCATCAACCCTCTTGTTGCAGCGCAAA
ACTTCGAATACAAAATCAGTAACATCCTGGATAAACCTCTGGAATCCTCCT
TCGGCTACGTACGCGTGTGCCCCGGTGCCTTCTCTGCCTACCGCTTCCGTG
CAATCATGGGCAGACCTCTCGAACAGTACTTCCACGGTGACCATACTCT
CCAAACAACCTCGGTCCCAAGGGTATCGAGGGCATGAACATTTTCAAGAAGA
ACATGTTCTTGGCCGAGGATCGGATTCTGTGTTTCGAACTCGTGGCCAAGG
CCGGGTCCAAATGGCATCTGTCCTACGTCAAGTCGTCCAAGGGCGAGACTG
ACGTGCCCCGAGGGAGCCCCGAATTCATCGGCCAGCGTCGTCGGTGGCTCA
ACGGCTCGTTCGCAGCTAGTATCTACTCATTGATGCATTTTGGCCGAATGT
ATAAGAGCGGCCATAACCTTCTGCGCATGTTCTTTTTCCATATTCAGATGA
TCTACAATACGTGCACCGTTATCATGACTTGGTTTGGCCTTGGTATGTGTT
GTTCAACAATATAAGTCTTTGTTCCCTCCGAACAATGACATCCCTCTTTCAA
CTTCCACTTTCTTCTTGCGTCTATTGTCTCCCAACACTAACATGTTCTAGC
TTCATACTGGCTCACAACCTCCGTCATCATGGACCTCGTCGGAAACCCTCC
CGCTCCAGAATCTGGCAGCACGCAGAGGGCATTCCCATTGGCAATACCGC
CACTCCGATTGTCAACACTGTTCTGAAGTACTTGTATCTGGCCTTCCTGCT
CTTGCAGTTTATTTTGGCTTTGGGTAACCGGCCTAAAGGGTGAGTTTGCAT
AATCTCCTAGTCAACTAAGGGGAGCTTCAGAAATATCCAATTCTGTCGCTT
GTTATTTTCATTGCCCTTCTCCCCGGCGAGATTCCCAGCGCTGAGCTCCGA
TATATGCGTTAGATGATACTGATAGCGCCCCTCAGATCTAAACACTCGTAC
ATCACCTCCTTCGTGCTATTTCGGCATTATCCAATTGTACATCATTGTCTTA
TCCATGTACCTCGTCGTCCGCGCCTTCAGCGGTGGCACACTCGCCTTCACA
ACAGACAAAGGTATCGGCGAATTCCTCAAGTCCTTCTTCAGTTCCGAAGGA
CCGGGAATCATCATCATCGCCCTCGCCGCTACCTTCGGCCTCTATTTTCGTC
GCCTCTTTTCATGTACCTTGACCCCTGGCACATGTTACCTCCTTCCCAGGCC
TACCTCCTGATCATGTCCTCGTACATCAACATCCTGATGGTCTACGCCTTC
AGCAACTGGCACGATGTGTCGTGGGGCACAAAGGGTGCGGACAAAGCCGAC
GCTCTGCCCTCTGCCCCAAACGCAAAAGGAAGACGACGGCAAAGCTGCTGTG
ATCGAGGAGATCGACAAGCCGCGAGGCGGATATCGACAGCCAGTTTGAAAGC
ACTGTGAAGCGTGGCCTGACGCCGTACGTGGAGCCAAAGGTGAAGGAGGGG
AAGTCGCTAGATGATTCTGTATAAGAGTTTCCGCACGCGGTTGGTGACGCTA
TGGCTGTTTTTCGAATGGCATTCTTGCCGTGGCCATTACCAGCGAGGATGTG
AACAAAGTTTGGATTACCGGTAGGCCTTACTTTTCTTTTTTCCCCCTTCCTC

FIG. 2C

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TTTTTTTTTTTTCTTTCGCCTTTTGGGGAAAAAAAATAAAAAATAA
AAACACTTTGCTAACGTGTTCTCCCAATCCAGTCCCGAGCAACCAGCC
GAACCACGCATTTCTTCCACGCTCTCCTTTGGGCGACCGCAGCGCTCTCCC
TCATCCGCTTCACCGGCGCATGCTGGTTCCTTGGCCGGACTGGAATTATGT
GCTGCTTCGCGAGAAGATAGTTCAGTCCATTTGGCTCTGGATTTTCTATATA
TTTGTGTTTGGTGATGCAAAAATCTTTTGCTTCCCTTTTCTCTTT
CGGGTGACCTTTTGTGTCGGGCGACGGCACGAAACCCGGAATAATATAAG
ACAAGGATGGGGGAGAAGAGAGCATGAAGATCGAAGATCGAAAGTCGAAAG
TCGAAAATTGAAAGGAGAAGAAAGGAAATGACAAGAACTGGCAGCTGCCG
CTTGGCCAACTGTTGGAAAGTTTTCTTTTGCATTTCTATGAATATGTCCC
GATTTTGTTTTTCTTTTCCCATTTGCTTGTTGTTCTTTTCGCTTTTTTCGAT
TCCTTTTCTATAATAATGGCAAGATGTGTCTTATTTCTCCTGCCTGGCCT
CTCTTTTGTGTGTTTCTATATGCGTGAGAGCCTCTGAATTCCGAATCTAAT
GTTCTGTTTGTGTTCTTATTTCTCTGATCGTCCCCGCCCCCTGGTGTTTTT
GTTGCTGCTGTTCTTGCTGTTACTGCTTTTTCTGTTTCTGGGTTTTTCCCT
TGTTGTGTAAATTTACTATATCCTACCTAGATGACTTTTTTTTTTTTTATT
TTCTTTTTTCGCTCTCCGCCTCTTCTGCAAATGATGTAGCTAATTGGCTGAT
ATGATTGGAATGAATTGAAGGCATTTACTTTTTCGAATCCATTTATTGACGG
CTGTAGCCTGTAGCCTGTAGCCTTGTACTGCGTATGTACATGTATATTATG
GAGTTCACCCGCCAAACCACAGCTCGGGCCGTTGGGCAATCAGCCGTGTCA
CGTGCACTCGGCTCCCCTGCCCGATGCATCAGCGTCATTCCTCATCCTATC
CCCGTCTTGGAAATCCTCCCAGGCCTCACTCCCCATCCGCCAACCTTTGCAC
AACGCCGTTACTCTGCACTCTGACTGCTTGTCCGTCCGCCCCGCCCCGTCAGC
CCTCGTTCCGCTCCCTTTTCGGCCCCCTTTTGTGTTTGGCCCCCTTCACGGTCC
CAAAAGAAATCTTATCTTATCACGGCACACCAACACCACTGTCTGTGTACT
GTACATGTACATACACACCCAGCCCCCGCCTCGCATCTCAACGACAGCA
TAAACAACCCCAAGCCAGTTCCACTTGGCTTCTCTTCCCCGTAGTTTGTG
TCCCGCTCTATCTCCCTCGGGCCTCCGTGCTTGGACCATAAACCGTCGGCC
TGCTGCGGAGACTCTCCGTGATCGAAAGCCTCGCCCCGCTCCCCGCCCTC
TTCTTCCCCCTCCCCTCCTCTGCACCTCGATTTACCTGGTACGGACCTTCC
TGCCGTCTTCTGTCTTCAATACAGCTTCCTCTTTGTCTCCCGTCCAGAC
CAAGTCAGGAAGAGACACGACCTGGTACTAGTTCTGTGTGGGGTCTCAGTT
GGAAGTGGGAAGCTTCCGGACTTGGTGACGGTTACACCTTTCTTGCGTCTTG
GGCTCTCCTTTTTTTTTTTTTTTTTTTTTTTTGTCTTAAAAAATTTT
TCCTTTTGCTTCTTTTACGTTACGGCGCAAAGTAAAGTTATCAGGAGGA
CAAAAGGAGGTTGCTTGTGCGGGAATGCAAGAGTAGGAAGGGGAAATTA

FIG. 2D

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CAAGAACAGAAGAGACGAGAGAAGAGCGATTCTGGGCATAACAAGCTTGGC
ACTTGTCAATTATCTGGTACCCTTGCCATATATTTGCACATTTGCACATATAC
GCTTTTTTATTTTCGGTGATTGACCGAGGGGCGTTCCTCTTTCACGATGTTGA
AGATATTGTCTATGGTAGGTCAAACCTTTATTCCGTTGTTGTTAATTAATGG
TTATCAGCTCCTCCCCCTTTTCTCCGCCTAATGGCGCCTCCTATATTTTAAT
AGAGATGCCGAATACACAGGCAATCAGCTGACTCTGTGCTGCAGAAAAAGA
AGCAACAAGCGGAGGCTGCTGCTGCTGGGCAGACCAAGAATAGGGTCGGAG
GTGCGAAAGCACGGATTCAACATGGTACGTTCCGCCAGCATCGCTTCCCTC
TTGTGATAAAATGCGAAACACTTCTCCAATGGAATGGGCTAACTGTCAGCT
TCGTCCTTCTCACCTTTCACAGATCTTCTCCGGGTCCGGAAACAGGAGGAG
GAGGAGAGCCGCACGGGTGCACGCCCCATTAAATTTCGAGTGGAAGAAATGGC
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TTTGAACCGCCCAGAGTAAAATGCACCCAGCGGATATACCACCCGAACATC
GACCCGCAAGGAAATGTGTGTCTGAACATACTGCGTGATGGGTGGACAGCC
GCGTTGGATGTCCAGGCCGTTGCATTTGGCTTACTGGTGCGTTATCCTCTC
AGAAGGGAGAGAAAAGGGGAAAAAAGAAAGAAAAAAAACCTGGTGCATAG
AACTAACGCCAGCATGCCAAAACGAAACAGCACATATTCATCCACACCACG
TACGAAGACCCCTTAATCCAAGAAGTCGCTGACGACCTTCGGCTGAACCGT
GAGGGCTTCCGACGCAACGTTCCGACAGCCATGCAGGGGGGGACGGTCCGG
AATACACAATACGATCGTGTCTTGAAGAGCTGAGATGGGTCTGAAGGGGAGG
TGATCTACTATACCATGGATGCAGTGGTAGTGGTGGTGGTGG

FIG. 2E

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Chitin Synthase Gene Intron Sequences

Intron 1 (2162 to 2443) (SEQ ID NO: 1) (282 bp):

GTGAGAAAACACTCTTTCCTATGTATATGCATATGATATAGATATAGATATAG
GTATACATTTATATACATATATAAGAGAGCGTGTGTGTCTGTGTGTGTCTG
TTTTGTGTGTGTGTATCTGTCTGTATATATATACACATCGATATATATATGCTT
TTGGCTACGTATTCAAGCACTGGTTCCTGCGCGGGCCACGGTACCAGT
GGTTTCAGGATGATATCCTCTCAACACAGGAACCACTTCTGCTAACTTGCCC
CTTAAATCGCTCCAG

Intron 2 (2901 to 2991) (SEQ ID NO: 2) (91 bp):

GTAGGTTTTTGTCTTGATTTCTTTTCTTTTACTCCCCTCTGCTTTGGTTTAT
GGTCGTCTCCTTGCTGATTTGCTGCTGCCATCTTAG

Intron 3 (3354 to 3431) (SEQ ID NO: 3) (78 bp):

GTCAGTACATATATGATACCCGTAGCCCAATTTTTTGGAACTTCTACTACTGC
TAACTGTACTAACTTCCCGTCTAG

Intron 4 (4279 to 4387) (SEQ ID NO: 4) (109 bp):

GTATGTGTTGTTCAACAATATAAGTCTTTGTTTCTCCGAACAATGACATCCCT
CTTTCAACTTCCACTTTCTTCTTGCGTCTATTGTCTCCCAACACTAACATGTTC
TAG

Intron 5 (4582 to 4730) (SEQ ID NO: 5) (149 bp):

GTGAGTTTGCATAATCTCCTAGTCAACTAAGGGGAGCTTCAGAAATATCCAA
TTCGTGGCATTGTTATTTTCATTGCCCTTCTCCCCGGCGAGATTCCCGGCGCTG
AGCTCCGATATATGCGTTAGATGATACTGATAGCGCCCTCAG

Intron 6 (5377 to 5495) (SEQ ID NO: 6) (119 bp):

GTAGGCCTTACTTTCCTTTTTTCCCCCTTCTCTTTTTTTTTTTCTTTCGCCTT
TTGGGGAAAAAATAAAAAAATAAAAACACTTGCTAACGTGTTCTC
CCACAATCCAG

FIG. 3

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1 MAYPGSNSPG GYGDGHRLLD LPSGSQYNLP AEHDASQSLH HQNQGPFSGP
51 FDDPQHHRG GSPVRSPSR YSLTESYVTDH POAQDHYGGQ MENPAAGFCV
101 PGRVPSPYTR SETSSTEAWR QRQAPGNLRR YATRKVKLVQ GSVLSVDYVPV
151 PSAIQNAVQA KYRNDLEGGS EEFTHMRYTA ATCDPNEFTL HNGYNLRPAM
201 YNRHTELLIA ITYYNEDKML TSRTLHGVMQ NIRDIVNLKK SEFWNKGKGA
251 WQKIVVCLVF DGIDPCDKDT LDVLATIGIY QDGVMMKKDVB GKETIAHIFE
301 YTTQLSVTAN QQLIRPHDDG PSTLPPVQMM FCLKQKNSKK INSHRWLFNA
351 FGRILNPEIC ILLDAGTKPG HKSLALWEA FYNDKDLGGS CGEIHAMLGK
401 GWKNLINPLV AAQNFYKIS NILDKPLESS FGYVSVLPGA FSAYRFRAM
451 GRPLEQYFHG DHTLSKQLGP KGIEGMNIFK KNMFLAEDRI LCFELVAKAG
501 SKWHL SYVKS SKGETDVPEG APEFIGQRRR WLNGSFAASI YSLMHFGRMY
551 KSGHNLLRMF FFHIQMIYNT CTVIMTWAL ASYWLTTSVI MDLVGNPPAP
601 ESGSTQRAFP FGNTATPIVN TVLKYLYLAF LLLQFILALG NRPKGSKHSY
651 ITSFVVFHII QLYIIVLSMY LVVRAFSGGT LAFTTDKGIG EFLKSFFSSE
701 GPGIIIIALA ATFGLYFVAS FMYLDPWHMF TSFPAYLLIM SSIYINILMVY
751 AFSNWHDVSW GTKGADKADA LPSAQTQKED DGKAAVIEEI DKPQADIDSQ
801 FESTVKRALY PYVEPKVKEG KSLDDSYKSF RTRLVTLWLF SNGILAVAIT
851 SEDVNKFGFT SRATSRTHF FHALLWATAA LSLIRFTGAC WFLGRTGIMC
901 CFARR*

FIG. 4

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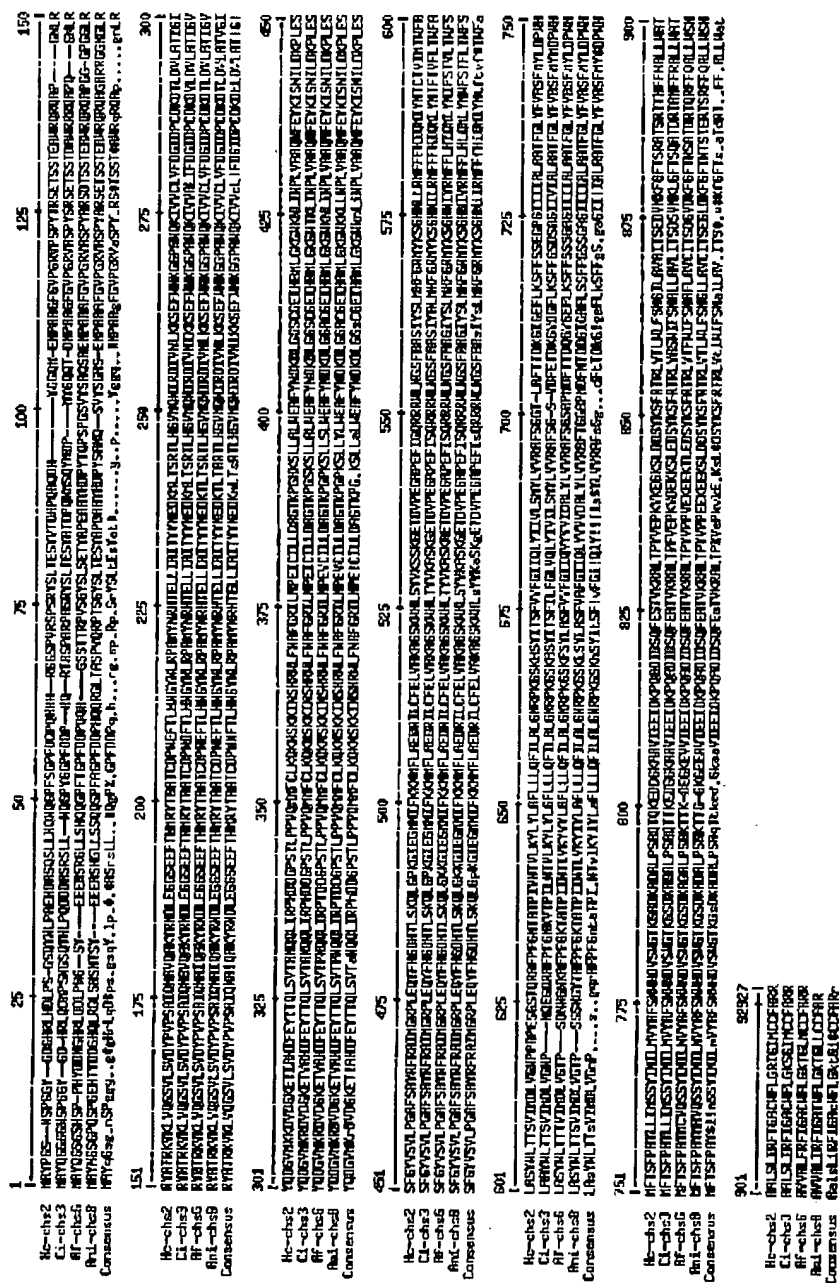


FIG. 5

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Chitin Synthase Intron 1 primers

Intron 1 5' primer sequence (SEQ ID NO: 7):

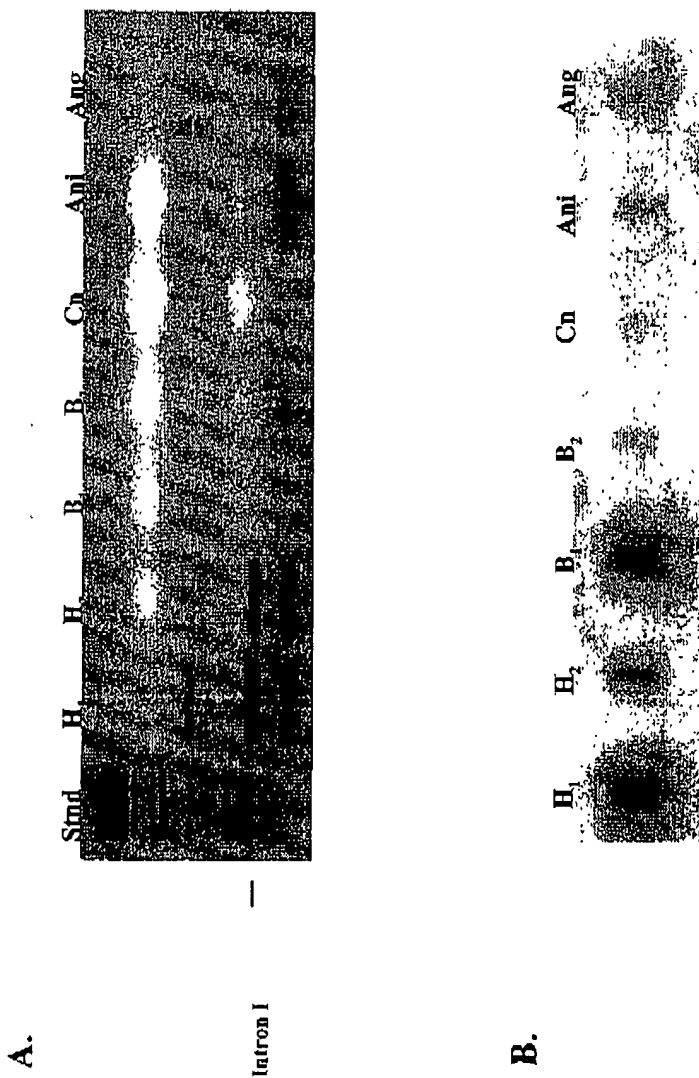
CACTCTTTCCTATGTATATGC

Intron 1 3' primer sequence (SEQ ID NO: 8):

CGATTTAAGGGGCAAGTTAGC

FIG. 6

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Inventors: JOHNSON, et al.
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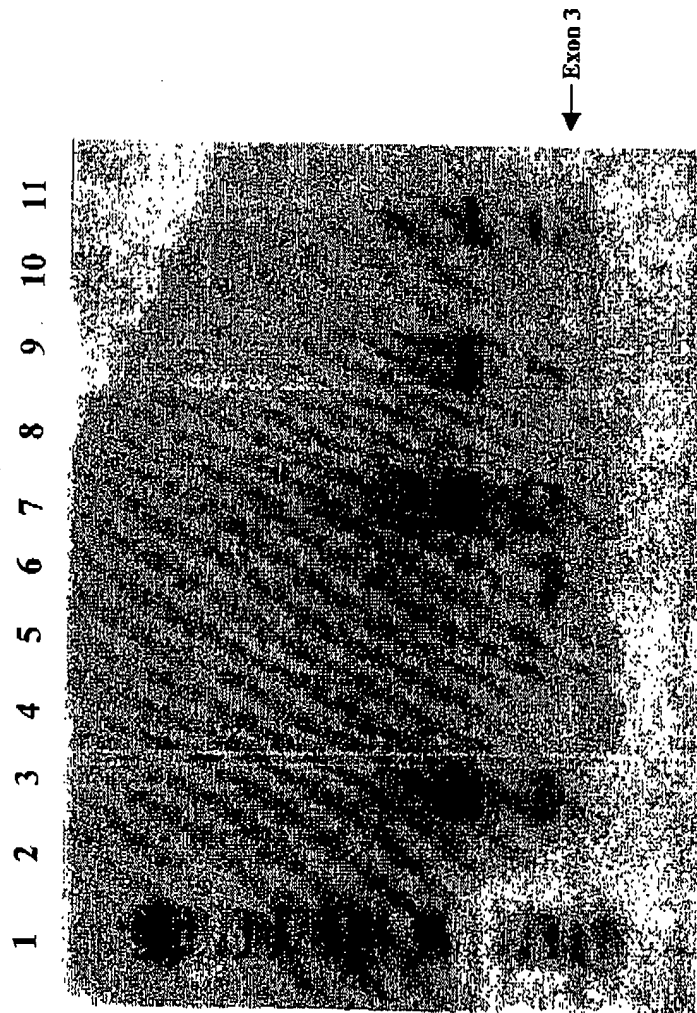


FIG. 8

US Appl. Serial No. Unassigned
HISTOPLASMA CAPSULATUM CHITIN
SYNTHASE SEQUENCES AND THEIR USE FOR
DETECTION OF HISTOPLASMA
CAPSULATUM AND HISTOPLASMOSIS
Inventors: JOHNSON, et al.
Express Mail No. EV 316331604 US

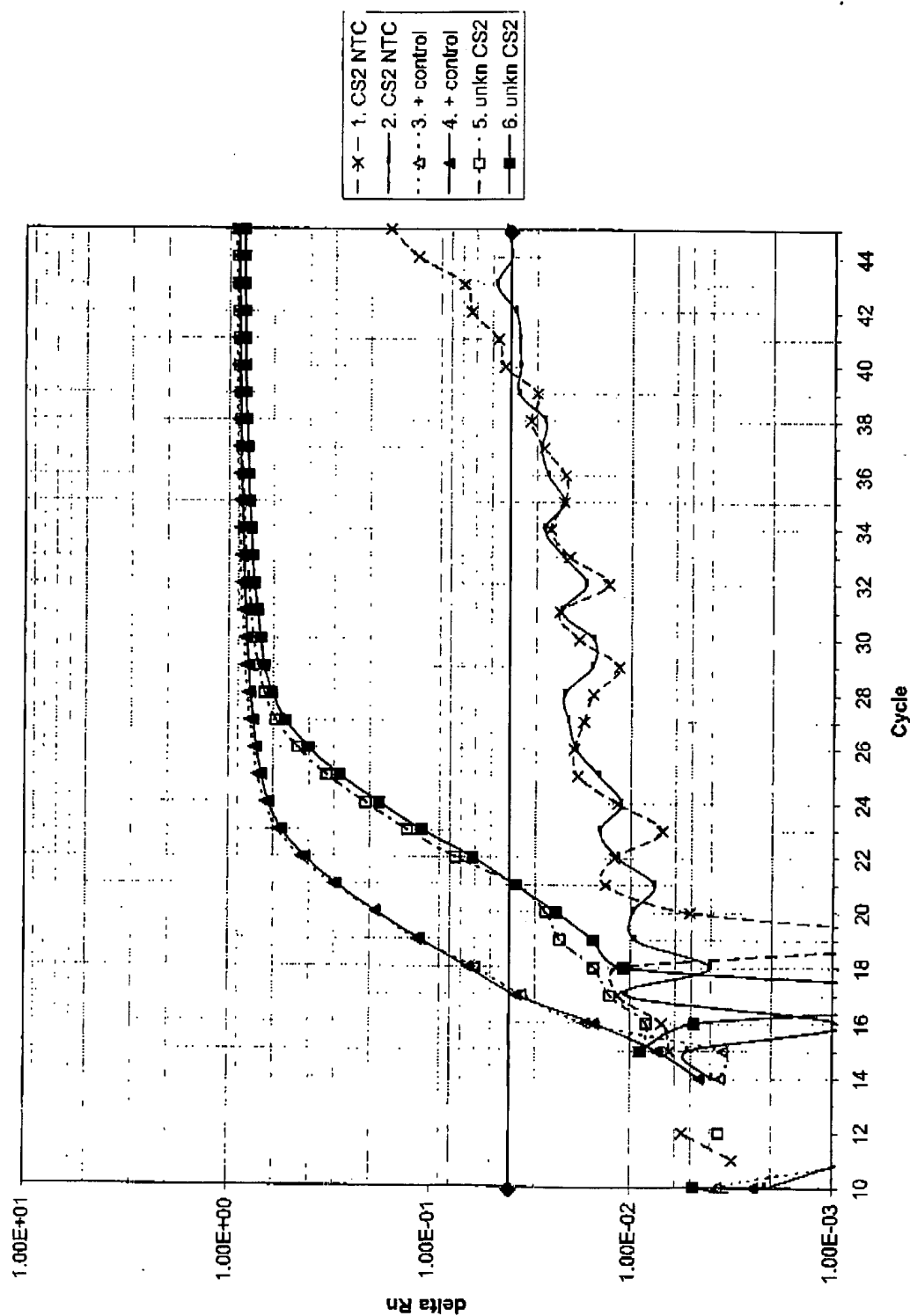


FIG 9A

US Appl. Serial No. Unassigned
HISTOPLASMA CAPSULATUM CHITIN
SYNTHASE SEQUENCES AND THEIR USE FOR
DETECTION OF HISTOPLASMA
CAPSULATUM AND HISTOPLASMOSIS
Inventors: JOHNSON, et al.
Express Mail No. EV 316331604 US

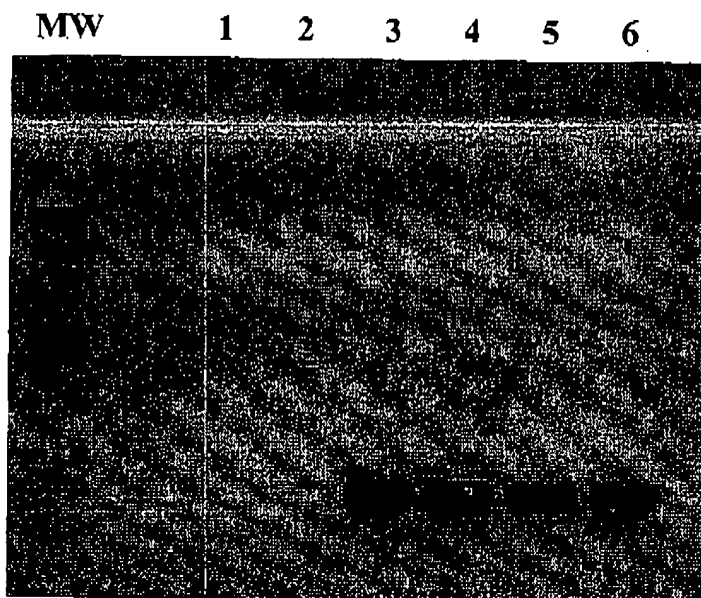


FIG. 9B

40715-294389
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US Appl. Serial No. Unassigned
TOPLASMA CAPSULATUM CHITIN
SYNTHASE SEQUENCES AND THEIR USE FOR
DETECTION OF HISTOPLASMA
CAPSULATUM AND HISTOPLASMOSIS
Inventors: JOHNSON, et al.
Express Mail No. EV 316331604 US

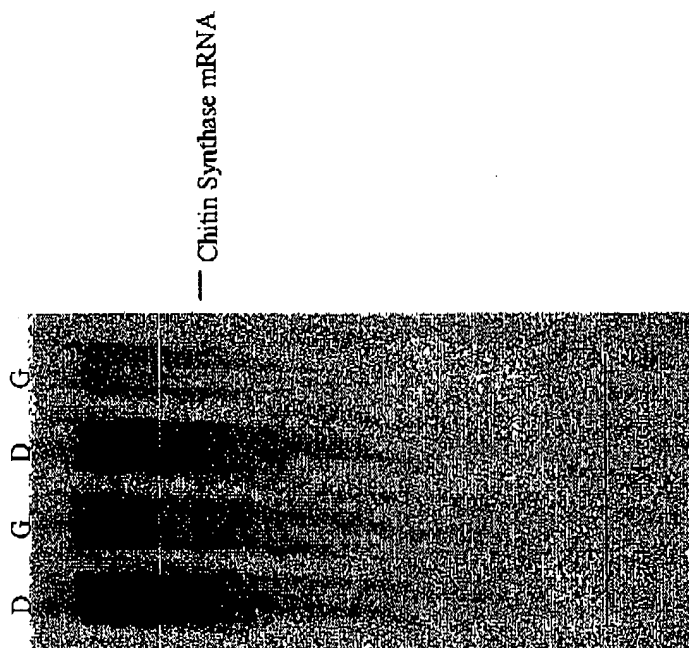


FIG. 10

US Appl. Serial No. Unassigned
HISTOPLASMA CAPSULATUM CHITIN
SYNTHASE SEQUENCES AND THEIR USE FOR
DETECTION OF HISTOPLASMA
CAPSULATUM AND HISTOPLASMOSIS
Inventors: JOHNSON, et al.
Express Mail No. EV 316331604 US

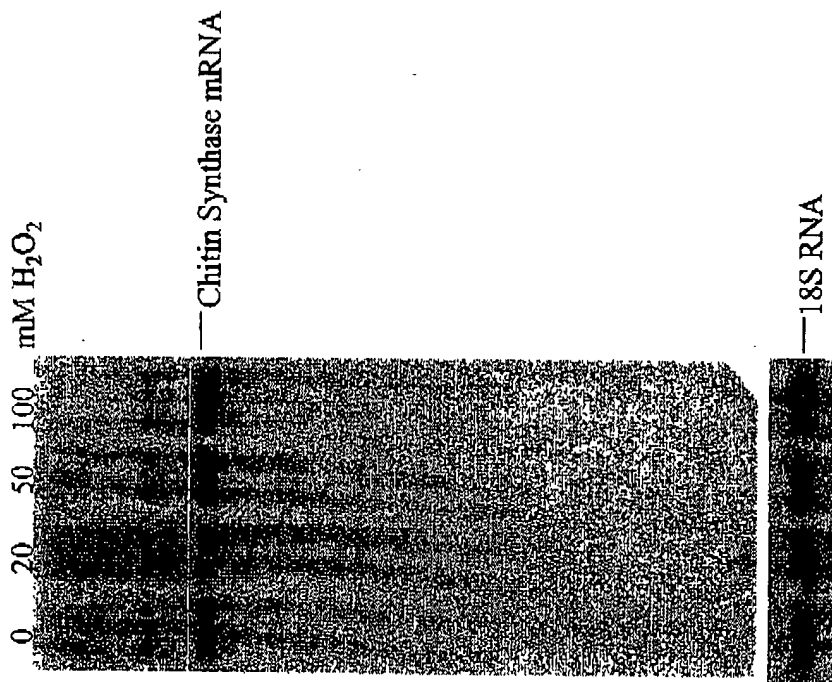


FIG. 11

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